



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,522	10/15/2003	Edward J. Seppi	VM 03-029US	5245

55499 7590 12/03/2009
Vista IP Law Group (Varian)
1885 Lundy Ave, Suite 108
San Jose, CA 95131

EXAMINER

KISH, JAMES M

ART UNIT	PAPER NUMBER
----------	--------------

3737

MAIL DATE	DELIVERY MODE
-----------	---------------

12/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/687,522	Applicant(s) SEPPI ET AL.	
	Examiner JAMES KISH	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47, 56-67, 69, 71 and 73 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-47, 56-67, 69, 71 and 73 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/09, 7/9/09, 7/16/09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 10-14, 17-33, 36-40, 43-47, 56-59 and 61-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salb (US Patent No. 6,923,950) in view of Ogawa et al. (US Patent No. 6,278,760) - herein referred to as Ogawa. Salb discloses

Art Unit: 3737

system and methods for radiographic imaging of tissue. In an embodiment, "the tissue being examined is sequentially transilluminated by X-ray beams with predetermined different mean energy spectra and a separate radiographic image is acquired during transillumination by each beam. Using a predetermined weighting coefficient for each image, the image processing system performs a weighted combination of the acquired images to produce a single displayed image. The use of transilluminating X-ray beams with appropriate mean energy spectra together with appropriate weighting coefficients in the image processing procedure enables the cancellation on the displayed image of radiographic density contributed by soft tissue and bone (column 9, lines 56-67)." "The tissue is first transilluminated by beam E_1 with a mean energy spectrum just below the K-absorption edge of the radio-opaque element in the imaging agent, and image X_1 is acquired... The tissue is then transilluminated by beam E_2 with a mean energy spectrum just above the K-absorption edge of the radio-opaque element in the imaging agent, and image X_2 is acquired (column 29, lines 10-25)." At column 29, lines 43-55, Salb discusses that image X_2 may be subtracted from image X_1 in order to produce image Z. Salb discusses using the natural log to modify the information (see column 31, lines 36-41). The imaging agent may be iodine (column 12, lines 11-13). Also, at column 30, lines 20-44, is a discussion of how the individual images (X_1 and X_2) are modified via the weighting coefficients. However, Salb teaches creating radiographic images and does not explicitly teach the creation of volumetric images.

Ogawa discloses a system and method wherein cone-like radiation is irradiated from each of different directions of projection to an object, and projection image signals

Art Unit: 3737

of different energy bands are acquired with respect to the object and each of the different directions of projection. Energy subtraction processing is performed on the projection image signals of the different energy bands. A three-dimensional image or a tomographic image of the object is formed from the energy subtraction-processed projection image signals (see Abstract). Also see column 3, lines 1-41 and column 4, lines 45-50. It would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate the teachings of Ogawa, that is, to use different projection directions to create a three dimensional image, with the teachings of Salb in order to provide for better diagnosis of a diseased part. It would be difficult for a physician to determine the size of a tumor or other diseased part with only a two dimensional image without the possibility of error.

Claims 3, 15-16, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salb in view of Ogawa, as applied to claims 1, 14 and 40 above, and further in view of Trauernicht (US Patent No. 5,629,968). Salb in combination with Ogawa is previously described in the rejection of claims 1, 14 and 40. However, there is no discussion of the manner in which the images are initially detected. Trauernicht discloses an apparatus and method for obtaining radiographic images of an object. Figure 3 shows two detectors separated by a beam stop device. The first detector receives the entire radiation dose. The beam stop "deactivates" certain lines of the second detector by not allowing those radiation beams to pass through it. These two images may be combined in registration to provide a composite image of enhanced

Art Unit: 3737

quality relative to that of the two components (column 5, lines 8-23 and lines 44-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a beam stop, as taught in Trauernicht, in the system of Salb and Ogawa to prevent certain lines of radiation to proceed to a detector in order to gain a composite image with enhanced quality.

Claims 69, 71 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salb in view of Ogawa as applied to claims 1, 22 and 29 above, and further in view of Lin et al. (US Patent No. 6,748,066) – herein referred to as Lin. Salb in combination with Ogawa is previously described in the rejection of claims 1, 22 and 29. However, these references fail to teach using acquired images to create a perfusion curve of the contrast agent. Lin teaches a system and method for measurements of CT perfusion. Images of a patient are acquired and a means for calculating calculates at least one of perfusion, time of peak and artery delay values (column 2, lines 23-56). It would have been obvious to one of ordinary skill in the art to utilize the teachings of determining perfusion based on CT acquired image data, as taught by Lin, with the system and methods of Salb and Ogawa because CT perfusion is helpful in diagnostic studies, such examples given by Lin including cerebral ischemia. However, perfusion studies are equally as helpful in many other situations and such teachings would only increase the utility provided by the systems and methods of Salb and Ogawa.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES KISH whose telephone number is (571)272-5554. The examiner can normally be reached on 8:30 - 5:00 ~ Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art
Unit 3737

JMK